

REMARKS

These remarks and the accompanying amendments are responsive to the Office Action dated May 30, 2008 (hereinafter referred to as the "Office Action"). At the time of the last examination, Claims 7, 12, 13 and 15-17 were pending, of which Claims 7, 12, 13 and 15 are independent. The Office Action rejected Claims 7, 12, 13 and 15-17.

Section 1 of the Office Action rejects Claims 7, 12, 13 and 15-17 under 35 U.S.C. 103(a) as being unpatentable over United States patent number 5,875,215 issued to Dobrica (the patent hereinafter referred to simply as "Dobrica") in view of United States patent number 4,489,354 issued to Dann et al. (the patent hereinafter referred to simply as "Dann"), and further in view of United States patent number 5,440,267 issued to Tsuda et al. (hereinafter referred to as "Tsuda").¹

The Examiner concedes that even the combination of Dobrica and Dann would not disclose "wherein the means for carrying out coherent detection carries out coherent detection by also using the sync words after the frame synchronization is established" in the case of Claims 7 and 12, and makes similar assertions with respect to similar recitations in the other independent Claims 13 and 15. However, the Office Action argues that Tsuda discloses carrying out coherent detection by using the sync words after the frame synchronization is established based on the assertions:

¹ The Office Action formally rejects the claims under 35 U.S.C. 103(a) only using a combination of two references; namely, Dobrica and Dann. However, subsequent reasoning makes clear that the Examiner intends to reject the claims under 35 U.S.C. 103(a) using a combination of three references; namely, Dobrica, Dann, and Tsuda. Accordingly, this response treats the rejection as being a 35 U.S.C. 103(a) rejection of the claims as being unpatentable over Dobrica, in view of Dann, and further in view of Tsuda. Clarification is requested if this is not the Examiner's intention. As described herein, since even the combination of Dobrica, Dann and Tsuda do not teach or suggest every feature of the independent claims, the rejection should be withdrawn and it is not necessary to argue in this response against the combination of Dobrica, Dann and Tsuda. Accordingly, lack of such arguments in this response should not be construed as the applicant acquiescing that such a combination is appropriate.

1) Frame synchronization is established at a frame synchronization circuit 207 in fig. 9 based on the sync word detected in a unique word (UW) detector 206.

2) If the previous input signal was synchronized, the current signal will now use the sync word to perform the frame synchronization.

3) In this case, previously frame synchronization occurred to the previous input signal.

What the Examiner appears to explain is that Tsuda discloses establishing the frame synchronization using the sync word and establishing the frame synchronization of the next input signal after the frame synchronization has established. There is no explanation that Tsuda discloses coherent detection by also using the sync word in addition to pilot symbols after the frame synchronization has been established. Therefore, the rejection appears to be based on a misinterpretation of Tsuda.

Tsuda is directed to a technique for acquiring a carrier frequency for $\pi/4$ -shift QPSK modulated wave in satellite communication. Referring to Fig. 9 and the corresponding descriptions in the specification, Tsuda discloses coherent detection of an input signal using a reference carrier. However, there seems to be no description on coherent detection by using the sync word in addition to pilot symbols.

In contrast, as shown in Table 5 in the present application, the pilot symbols are transmitted together with the sync words. This makes it possible to reduce the overhead and increase the data transmission efficiency. In addition, once the frame synchronization has been established, since the sync words can be considered as an integral part of a known fixed pattern, and are utilized as the part of the pilot symbols for the coherent detection, the accuracy of the coherent detection can be maintained without the slightest degradation (see paragraph [0242]).

As amended herein, the independent claims now add "the pilot symbols and" to clarify the recited features in line with the above arguments. Such amendment is supported, for example, in paragraph [0242] and paragraph [0247]. Accordingly, the 35 U.S.C. 103(a) rejection should be withdrawn.

In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney.

Dated this 29th day of October, 2008.

Respectfully submitted,

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